HURRICANE HARVEY
AUGUST 2017

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AUG 2017
Hurricane Harvey

- August 25, 2017
- Harvey attained Category 4 making landfall near Rockport, Texas.
Hurricane Harvey

- 71 confirmed deaths
- Catastrophic inland flooding
- FEMA director Brock Long called Harvey “the worst disaster in Texas history”
- Economic losses are preliminarily estimated at between $70 to $200 billion, with a large portion of the losses sustained by uninsured homeowners.
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- 100 tipping bucket rain gages
- 1-mm volume tipping buckets
- Legacy ALERT
- 75 rain gages received direct
- 25 rain gages received through a single repeater
- NovaStar5 data collection and processing server
• August 25 through August 31
• 7 days
• Reported rain totals in the news exceeding 50 inches
Rain Totals
Aug 25 to Aug 31
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Cumulative Rainfall

Cumulative Rainfall (inches)

• Best site 98 percent
• Worst site 52 percent
• Average reception system-wide was 80 percent
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Theoretical Data Loss

Data Loss Related to Data Loading

- X-axis: Reports per hour
- Y-axis: Data Loss Percentage

Graph shows increasing data loss as reports per hour increase from 0 to 8000.
Harvey Legacy Data Loss

Total Hourly Traffic for the Analysis Period

Peak hour was 3700 reports!
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• How did the data loss from a legacy ALERT system during the massive Harvey event match up with the theoretical data loss model?
Harvey Legacy Data Loss

Total System Data Loss as a Function of Hourly Traffic Load

- System-wide data loss
- Theoretical

Peak hour of 3700 reports lost 36% of the incrementing reports.
THEORETICAL MODEL WAS ACCURATE

ALERT2 IS JUSTIFIED

QUESTIONS?